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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION
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In the Matters of	)	
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Provision of Aeronautical	)	
Services via the Inmarsat System	)	
via the Inmarsat System	)	
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Provision of Aeronautical	)	
Services via the Inmarsat System	)	
Order on Reconsideration and	)	CC Docket No. 87-75
Further Notice of Proposed Rulemaking	)	
	)	
Provision of Aeronautical Services via	)	
the Inmarsat System	)	
Notice of Proposed Rulemaking	)	

PETITION FOR RECONSIDERATION

AMSC Subsidiary Corporation ("AMSC") hereby petitions for reconsideration of the Commission's October 23, 1998 decision in the above-captioned proceeding.[1/] The Order is wrong that the international coordination process in the MSS L-band is sufficiently complete and that Comsat may provide aeronautical service within the U.S. on international flights without any adverse impact on AMSC. The Order in fact will cause harm to AMSC's efforts to coordinate sufficient spectrum for its U.S.-licensed MSS system. Given Comsat's failure to demonstrate compliance with the Commission's technical requirements and the availability of AMSC's space segment for use on international flights, the Commission should reverse its decision and maintain a clear geographic limit on the use of Inmarsat for aeronautical service within the United States.

Background

AMSC's System and the Commission's Policy in the MSS L-band. AMSC is the entity authorized by the Commission in 1989 to construct, launch and operate a U.S. MSS system in

1/ Report and Order and Authorization, CC Docket 87-75 (October 23, 1998) ("Order").

the upper L-band (1545-1559/1646.5-1660.5 MHz).[2/] The first AMSC satellite, AMSC-1, was launched in 1995, and AMSC began offering service in 1996, representing an investment of over $600 million. Today, AMSC offers a full range of land, maritime, and aeronautical mobile satellite services, including voice and data, throughout the contiguous United States, Alaska, Hawaii, the U.S. Virgin Islands, and coastal areas up to 200 miles offshore. AMSC operates what is essentially a "bent-pipe" system, and, given the Commission's mandate for open access to its satellite,[3/] AMSC's space segment and Reston, Virginia earth station are available to be used by any service provider interested in providing MSS.

Early in the MSS licensing process, the Commission concluded that a domestic MSS system would need access to at least 20 MHz of spectrum in order to be viable and that there was only enough spectrum in the MSS L-band for the Commission to authorize a single domestic MSS system.[4/] The Commission ultimately assigned 28 MHz of spectrum to the domestic MSS licensee, AMSC.[5/] AMSC has never gained full access to its licensed spectrum, however, because of the need to share this resource with foreign systems, including the Inmarsat,

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2/ Memorandum Opinion, Order and Authorization, 4 FCC Rcd 6041 (1989); Final Decision on Remand, 7 FCC Rcd 266 (1992); *aff'd sub nom.* Aeronautical Radio, Inc. v. FCC, 983, F.2d 275 (D.C. Cir. 1993) ("*Licensing Order*").

3/ *Licensing Order* at para. 115.

4/ Notice of Proposed Rule Making, Docket No. 84-1234, 50 FR 8149, para. 23 (January 28, 1985). Second Report and Order, Docket No. 84-1234, 2 FCC Rcd 485, paras. 4-9 (1987) ("*Second Report and Order*"), *clarified*, 2 FCC Rcd 2417 (1987), *recon. denied*, 4 FCC Rcd 6029 (1989) ("*MSS Recon Order*"), *rev'd and remanded on other grounds sub nom.*, Aeronautical Radio, Inc. v. FCC, 928 F.2d 428 (D.C. Cir. 1991), Tentative Decision on Remand, 6 FCC Rcd 4900 (1991), Final Decision on Remand, 7 FCC Rcd 266 (1992), *aff'd sub nom.*, Aeronautical Radio, Inc. v. FCC, 983 F.2d 275 (D.C. Cir. 1993).

5/ *Licensing Order* at para. 52.

Canadian, Mexican, and Russian systems, all of whom have coverage that overlaps AMSC's satellite footprint.

The presence of these multiple systems requires the international coordination of the available spectrum. International coordination of these frequencies has been difficult, because the aggregate demand of the different systems far exceeds the current supply of L-band spectrum, and to date this process has only produced temporary arrangements, pursuant to the Mexico City Agreement, that neither provide AMSC with access to its licensed spectrum nor provide any assurance that the other parties to the negotiations will be accommodating over the long-term. At the most recent coordination meeting in June, the parties were unable to agree on how to accommodate the new Japanese system, which is scheduled for launch in 1999 and is mutually exclusive with AMSC's operations.

In 1996, in recognition of the difficulty of coordinating sufficient spectrum for AMSC in the upper L-band, the Commission proposed to authorize AMSC to operate its data terminals in the lower L-band on a permanent basis.[6/] The Commission stated its intention not to license any additional MSS systems in the MSS L-band until AMSC is assured of access to at least 28 MHz through the international frequency coordination process.[7/]

Use of Inmarsat for Aeronautical MSS in the U.S. and the Commission's Order. For more than a decade, the Commission has been considering if and how Aeronautical Mobile

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6/ Notice of Proposed Rulemaking, Establishing Rules and Policies for the Use of Spectrum for Mobile Satellite Service in the Upper and Lower L-band, IB Docket No. 96-132, 11 FCC Rcd 11675, paras. 9-11, 16 (June 18, 1996) ("*Lower L-band NPRM*").

7/ *Id.* at paras. 9-11, 16, 19.

Satellite Service ("AMSS") via Inmarsat could be provided in the United States.[8/] In 1989, the Commission found that Comsat could use Inmarsat to provide AMSS on an ancillary and supportive basis.[9/] However, the Commission limited the geographic scope of Comsat's aeronautical services in the United States to international flights, which the Commission defined as flights (i) from the United States to a foreign point, (ii) from a foreign point into the United States, and (iii) between any two foreign points. The Commission held that aircraft in flight between two U.S. domestic points, even if part of an international flight, could only use the space segment of the U.S. domestic licensee, AMSC. The Commission also required Comsat and any other aeronautical service provider to develop with AMSC appropriate arrangements for hand-off of aeronautical traffic between the Inmarsat system and AMSC's domestic MSS system.[10/]

In response to a petition for reconsideration of this decision, the Commission issued a Further Notice of Proposed Rulemaking ("*FNPRM*") on the use of Inmarsat for aeronautical services in the United States.[11/] In the *FNPRM*, the Commission stated its concern that permitting such use would result in an increase in Inmarsat's spectrum demands, making it more

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8/ For the purposes of this petition, "AMSS" includes both Aeronautical Mobile-Satellite (Route) Service ("AMS(R)S"), used to provide communications to support domestic and international air traffic, and Aeronautical Mobile Satellite Service, which in general includes communications such as passenger and airline administrative traffic unrelated to safety or regularity of flight.

9/ In the Matter of Provision of Aeronautical Services via the Inmarsat System, 4 FCC Rcd 6072 (1989) ("*Aeronautical II*").

10/ *See Aeronautical II* at 6079; Communications Satellite Corp., 4 FCC Rcd 7176, 7180 (1989).

11/ Order on Reconsideration and Further Notice of Proposed Rulemaking, In the Matters of Provision of Aeronautical Services Via the Inmarsat System and Aeronautical Radio Inc. and the Air Transport Association of America Request for Waiver, 11 FCC Rcd 5330 (1996) ("*Aeronautical FNPRM*").

difficult for AMSC to gain access to licensed spectrum.[12/] The Commission proposed to reestablish geographic limits on Inmarsat's aeronautical service, and asked for comment on three options for such service. Under the first option, the use of Inmarsat would be prohibited in U.S. airspace, beginning twelve nautical miles from the U.S. shoreline, requiring aircraft to switch to AMSC's system upon entry into U.S. airspace. The second option would permit aircraft to use Inmarsat only until the first landing point in the U.S. or upon an aircraft's last departure point from the United States. Under the third option, aircraft would be permitted to use Inmarsat for the entire trip on outbound and inbound international flights, including flight segments between two U.S. domestic points. The Commission noted that the most significant impediment to adopting this final option is the lack of sufficient spectrum in MSS L-band. *FNPRM* at para. 28.

On October 23, 1998, the Commission released its decision allowing Comsat's use of Inmarsat during the entire duration of international flights. The Commission ruled that a requirement that aircraft hand off international communications to AMSC or to a terrestrial service provider, either in-the-air or on-the-ground, could potentially cause severe disruption of service and affect aircraft safety. The Commission also concluded that requiring aircraft used for international flights to be equipped with a second satellite communications system would not be

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12/ *Aeronautical FNPRM* at paras. 17-19. The Commission noted that although it

> generally promoted competition in satellite communications, ... the circumstances presented here pose certain limitations on the extent to which we can achieve a fully competitive U.S. market for MSS systems in the L-band. . . .
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> We want competition in the U.S., but the first step is to ensure sufficient spectrum for the U.S. domestic MSS system to become an effective competitor. This will require successful completion of the current coordination process.

practical or safe because of the additional space, weight, and cost requirements. Order at para. 13. The Commission found that "there will be no negative impact on AMSC, the U.S. licensee." *Id.* at para. 24. The Commission stated that "the arrangements agreed to in the Mexico City Agreement have sufficiently coordinated use of the spectrum," and asserted that "the amount of spectrum that would be required for Inmarsat to provide AMS(R)S or AMSS in connection with international flights in the United States should be minimal given the limited number of aircraft in international flight operating within U.S. airspace." *Id.* at para. 19. According to the Commission, the Mexico City Agreement's annual usage review provisions will allow it to monitor closely the efficacy of the annual temporary coordination arrangements and the impact on spectrum usage in the United States. Comsat's modified authorization is conditioned on Comsat's compliance with the Commission's priority and preemptive access rules. *See* 47 C.F.R. § 2.106, footnotes 730C, US308.

Discussion

I. The Commission's Decision Will Cause Harm to AMSC

The Commission is wrong that "the L-band has been coordinated" and that its decision will "have no negative impact on AMSC." As indicated above, the international coordination process in this band has to date only produced temporary arrangements that neither provide AMSC with access to its licensed spectrum nor provide any assurance that it will gain access to this spectrum in the future. At best, AMSC has coordinated access only until the end of 1999 to no more than approximately 7 MHz of the approximately 28 MHz that is subject to coordination among the operators, far less than the 14 MHz that the Commission committed to coordinate as recently as the *Lower L-band NPRM.* AMSC only agreed to the Mexico City approach of short-term arrangements based on actual demand because of the Commission's commitment to help

AMSC coordinate access to its licensed spectrum -- a commitment that appears to be wavering with this order -- and this coordination process will be complete only when AMSC has gained full access to this spectrum.[13/]

Given the unsettled nature of this coordination and the degree of congestion in this band, every kHz of spectrum is important, now and in the future environment. The Commission says that AMSC's loss will be minimal, but it makes no effort to quantify AMSC's loss or otherwise define what it considers to be "minimal." In the zero-sum game of international coordination, Inmarsat's gain from the Commission's decision, no matter how small, will be AMSC's loss. Moreover, AMSC disagrees with the Commission that the amount of additional spectrum required by Inmarsat as a result of this decision should be minimal. The Commission does not provide any precise or detailed information or cite any meaningful support in the record of this proceeding to support its conclusory statement about the size of the market, and AMSC believes that it is premature to reach any conclusions about the ultimate amount of spectrum that will be used for aeronautical communications on either domestic or international flights. The market is still in the process of being established, with new equipment and services continuing to be introduced.

The Commission's commitment to closely monitor the impact of its decision on L-band spectrum usage in the U.S. is impractical, as there are no apparent means of determining how

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13/ Under the *DISCO II* framework, the Commission may deny non-U.S. licensed systems access to the U.S. market, for domestic or international service, on the basis of spectrum availability. Given AMSC's inability to gain access to its licensed spectrum, there is no MSS L-band spectrum available for use of Inmarsat for AMSS on international flights in the United States. Report and Order, Amendment of the Commission's Regulatory Policies to Allow Non-U.S. Licensed Space Stations to Provide Domestic and International Service in the United States, 12 FCC Rcd 24094, paras. 127, 146-150 (1997).

much spectrum is or will be used for this service. Inmarsat is unlikely to indicate what portion of its stated spectrum needs result from its provision of AMSS in the United States, and the Commission does not otherwise describe how it will obtain this information. The more effective way to protect AMSC's access to its licensed spectrum is to maintain a clear geographic limit on Comsat's use of Inmarsat for AMSS in the United States.

II. AMSC Could Provide AMSS on International Flights in the U.S. on a Safe and Reliable Basis

In its order, the Commission concludes that use of Inmarsat's system throughout the entire duration of international flights is preferable to a requirement that aircraft hand off international communications to AMSC or to a terrestrial service provider, either in-the-air or on-the-ground, once in the United States. According to the Commission, such hand-offs could potentially cause severe disruption of service and affect aircraft safety. In coming to this conclusion, the Commission ignores the fact that, with cooperation from Comsat, Inmarsat, and other aeronautical service providers, aircraft on international flights could easily and simply execute hand-offs between Inmarsat and AMSC, without installing any additional equipment aboard these aircraft.

As described in its comments in this proceeding, AMSC designed and built its satellite and network control facilities to comply with International Civil Aviation Organization ("ICAO") standards, and its space segment is fully capable of being used by an aeronautical system that incorporates ICAO standards.[14/] As a result, aeronautical service providers using Inmarsat's system could also provide service over AMSC's space segment if they interconnected their earth station facilities with AMSC's Reston, Virginia earth station. This step would be very

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14/ Reply Comments, AMSC Subsidiary Corporation, CC Docket No. 87-75, at 6-7 (October 4, 1996).

inexpensive, requiring the use of a 56K data line, modems, and other interface equipment that AMSC estimates together would cost Comsat or any other aeronautical service provider no more than $15,000 a year.[15/] (Over time, additional data lines could be procured if warranted by a growth in demand for these services.) Despite the reasonableness of this expense and the Commission's requirement for the development of hand-off procedures with AMSC, no aeronautical service provider has taken the steps necessary to achieve interoperability with AMSC's system. With such interoperability, these providers could provide the same services to their customers using AMSC's space segment as they do through the Inmarsat system, without any change in the customer's equipment. Here, the handover between Inmarsat and AMSC's satellite, whether in-the-air or on-the-ground, would be as easy as a handover between two Inmarsat satellites, a procedure that is safe and well-established.[16/]

15/ *See* Petition to Deny of AMSC Subsidiary Corporation, at 8-9, Affidavit of Dennis W. Matheson, FCC File No. ITC-98-089 (March 6, 1998); Petition to Deny of AMSC Subsidiary Corporation, at 2 n. 4, 9, FCC File No. 1281-DSE-P/L-96 (March 12, 1996).

16/ These aeronautical service providers could also achieve interoperability by making certain modifications to their ground facilities. AMSC estimates that these modifications would require an expenditure of approximately $1 million, a small fraction of their overall investment in their facilities. The $1 million figure assumes that the service providers' existing ground equipment is designed to operate with multiple satellites (since Inmarsat's system has multiple satellites), and that they therefore need to make only a very minor addition to their ground equipment to access the U.S. system. The estimate also includes additional earth station equipment such as an antenna and RF equipment to access the satellite.

In order for AMSC itself, as a service provider, to offer a service that permits users of Inmarsat space segment to use AMSC space segment without any change in equipment, AMSC would also need to license certain protocols that are proprietary to Inmarsat and the Inmarsat aeronautical service providers. Based on its exploration of such an effort, AMSC has concluded that it would cost at least several million dollars for it to establish such compatibility. This is several times more than it would cost existing Inmarsat aeronautical service providers to establish such compatibility, since they already have the relevant network control protocols and facilities.

To date, providers of Inmarsat service (all of which are affiliated with Inmarsat signatories) have not undertaken to achieve this interoperability. The Commission should strongly encourage such action by reconsidering and reversing its order and imposing more restrictive geographic limits on the use of Inmarsat in the U.S. At a minimum, AMSS providers should not be permitted to use Inmarsat on flight segments between two U.S. domestic points.

III. Comsat Has Not Demonstrated That It Can Comply with the Commission's Priority and Preemptive Access Requirements

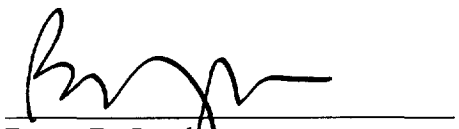
As mentioned above, the Commission's order conditions Comsat's modified authorization on its compliance with the Commission's requirements for priority and preemptive access for aeronautical safety communications. Order at para. 27. There is no evidence, however, that Inmarsat or its signatories are capable of meeting this fundamental requirement. Before permitting any use of Inmarsat to provide aeronautical communications in the United States, the Commission should require the relevant service providers to demonstrate that they can comply with these rules.

Conclusion

For all of the aforementioned reasons, the Commission reconsider and reverse its decision in the above-captioned proceeding.

Respectfully submitted,

AMSC SUBSIDIARY CORPORATION



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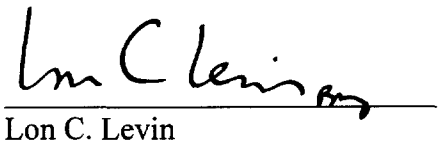

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